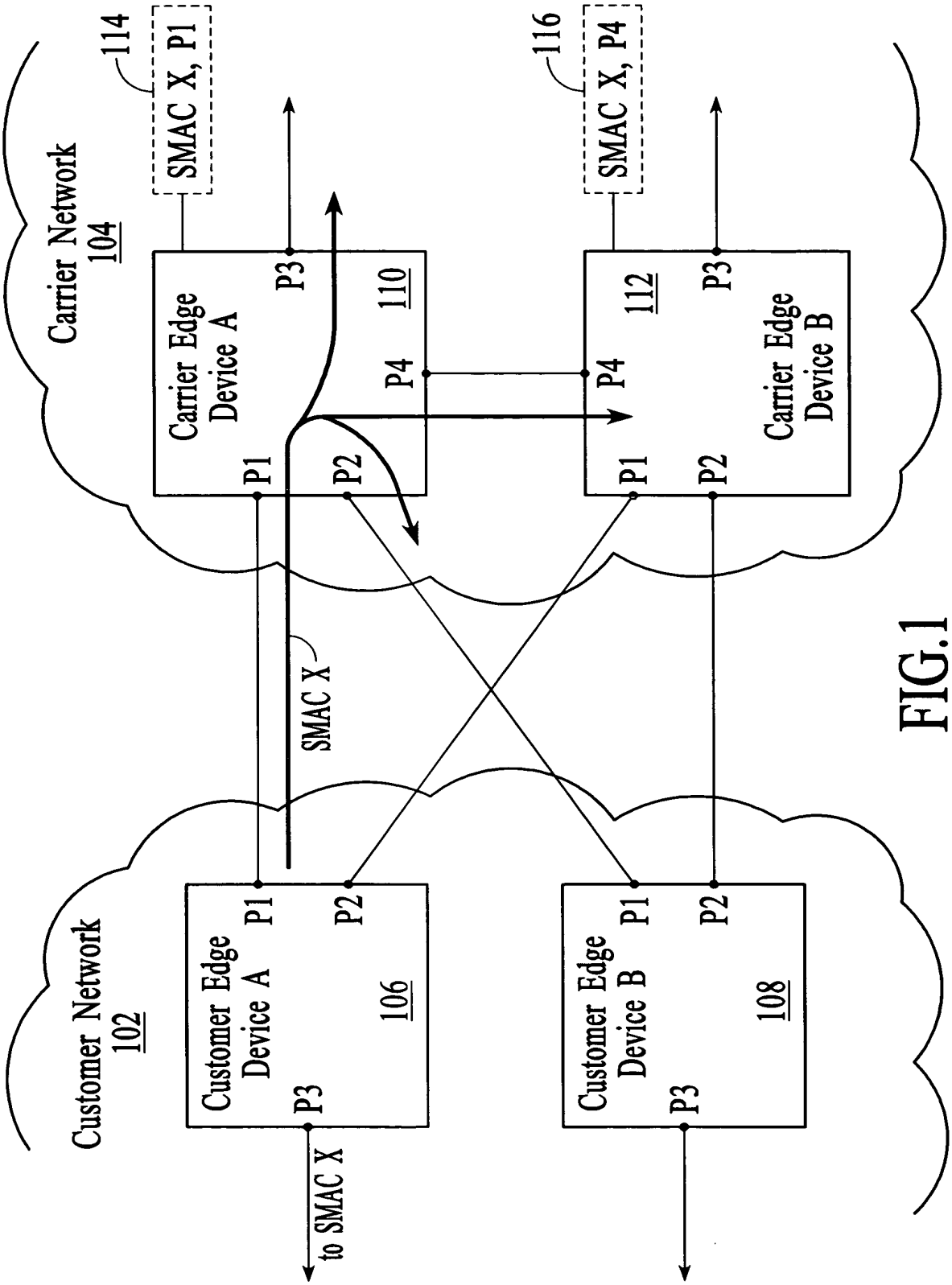
Carrier Network
104
114
SMAC X, P1
116
SMAC X, P4
Carrier Edge
Device A
110
P1
P2
P3
P4
Carrier Edge
Device B
112
SMAC X
Customer Network
102
Customer Edge
Device A
106
Customer Edge
Device B
108
to SMAC X

FIG.1

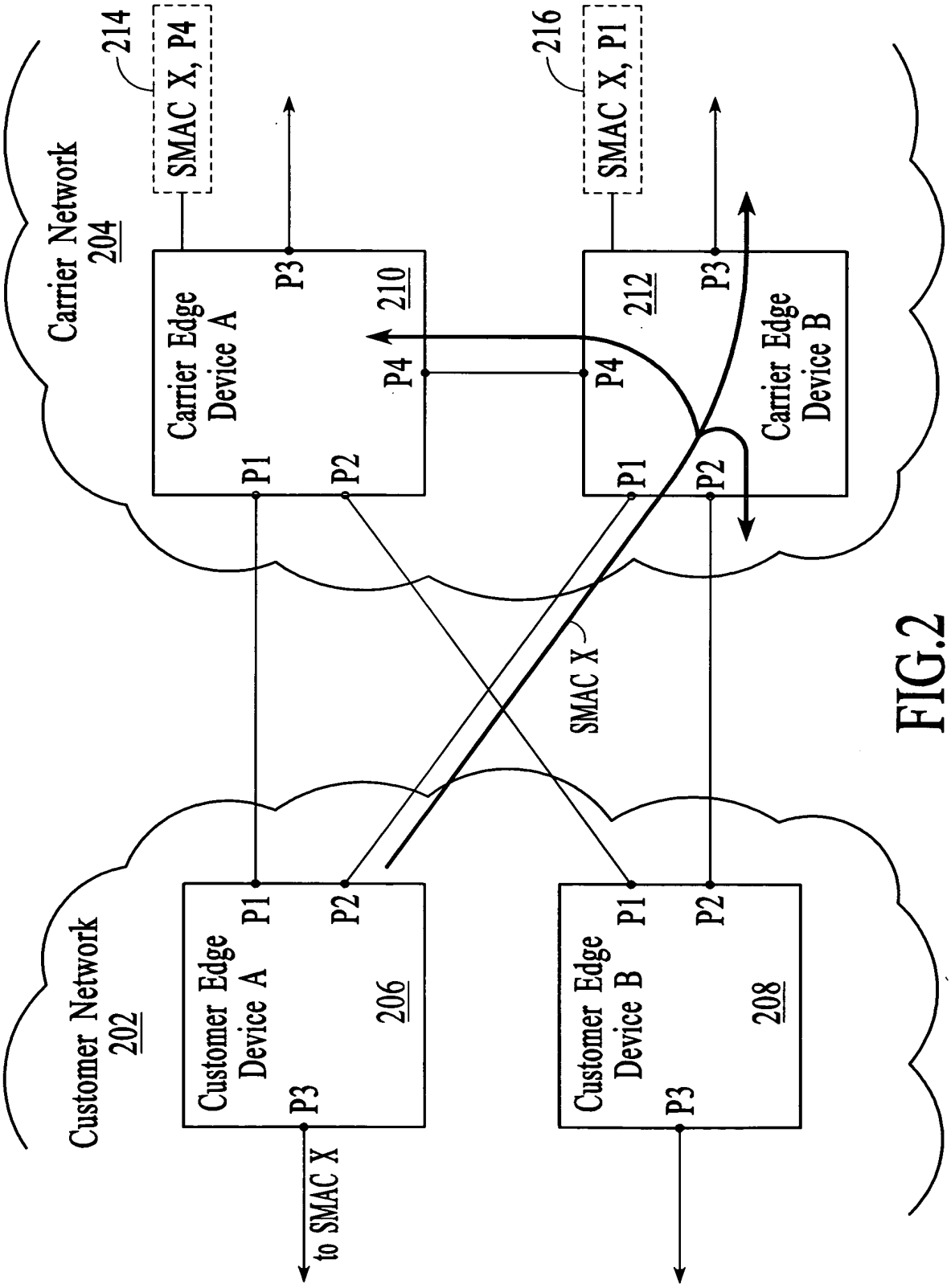
Carrier Network
204
214
SMAC X, P4
216
SMAC X, P1
Carrier Edge
Device A
210
P3
P4
P1
P2
212
Carrier Edge
Device B
SMAC X
Customer Network
202
Customer Edge
Device A
206
Customer Edge
Device B
208
to SMAC X

FIG.2

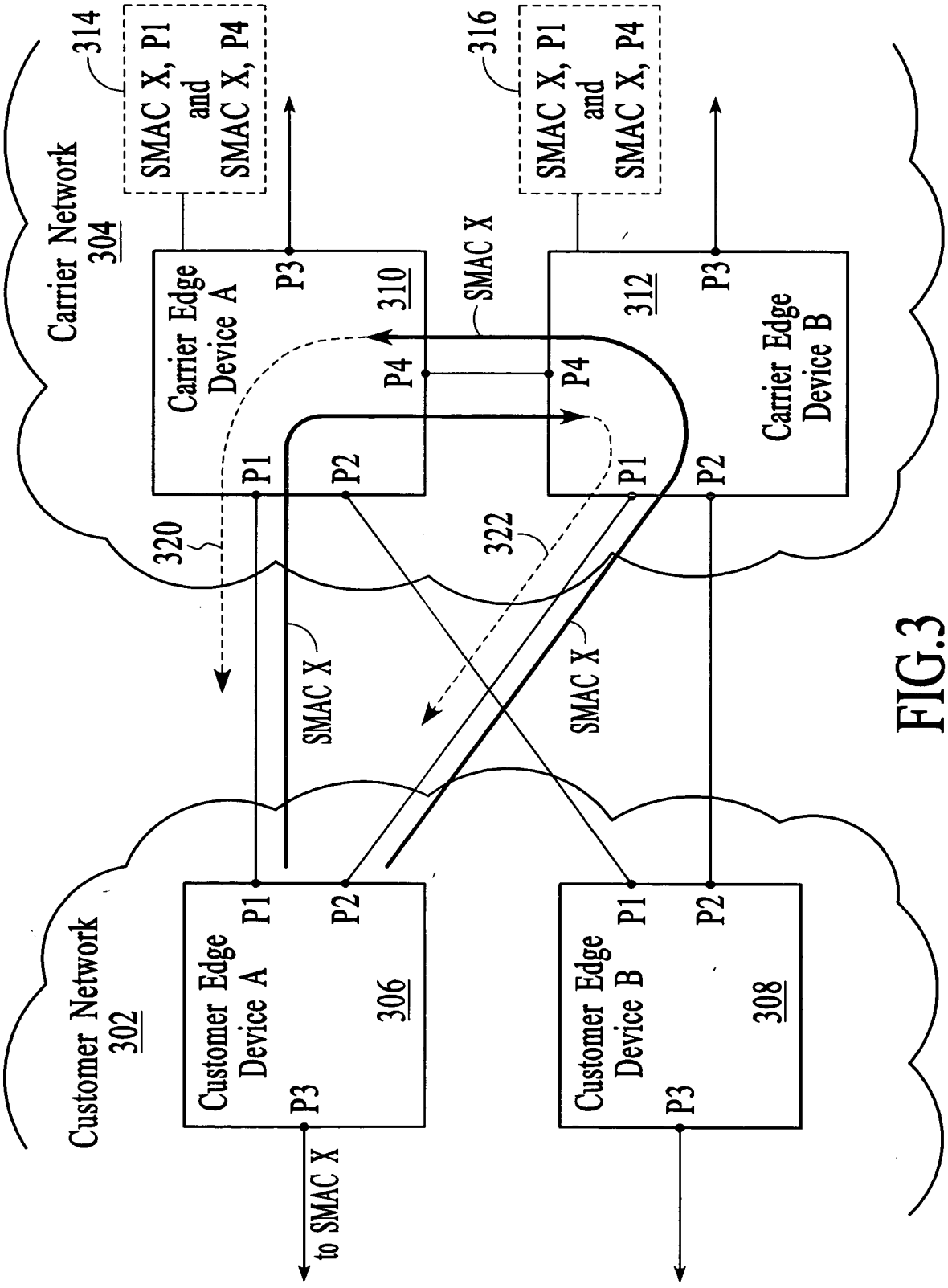
Carrier Network
304
314
SMAC X, P1
and
SMAC X, P4
316
SMAC X, P1
and
SMAC X, P4
Carrier Edge
Device A
310
Carrier Edge
Device B
312
P1
P2
P3
P4
SMAC X
320
322
Customer Network
302
Customer Edge
Device A
306
Customer Edge
Device B
308
to SMAC X

FIG.3

FIG.4

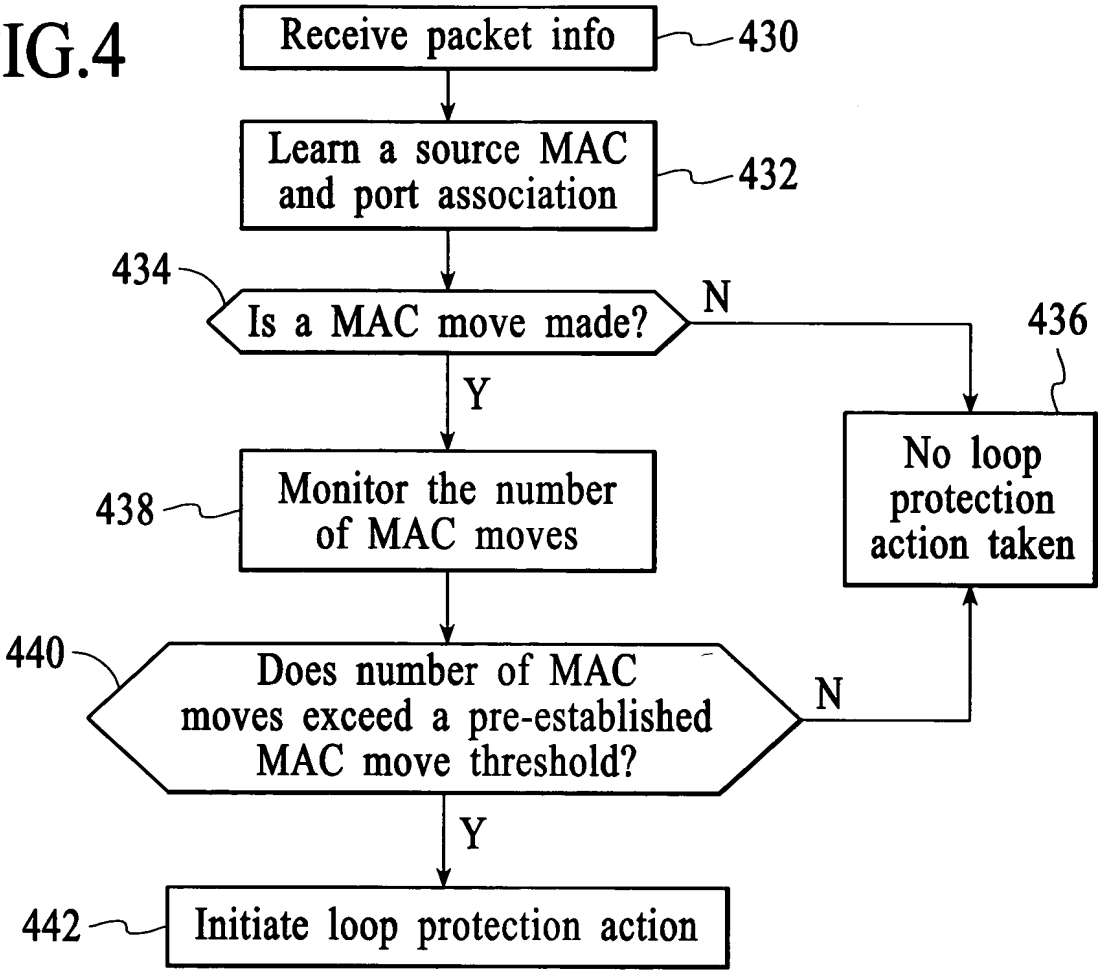

FIG.5

Time	Source MAC Learning State	MAC Move Count
t_0	SMAC X, P1	0
t_1	SMAC X, P4	1
t_2	SMAC X, P1	2
t_3	SMAC X, P4	3
t_4	SMAC X, P1	4
t_5	SMAC X, P4	5

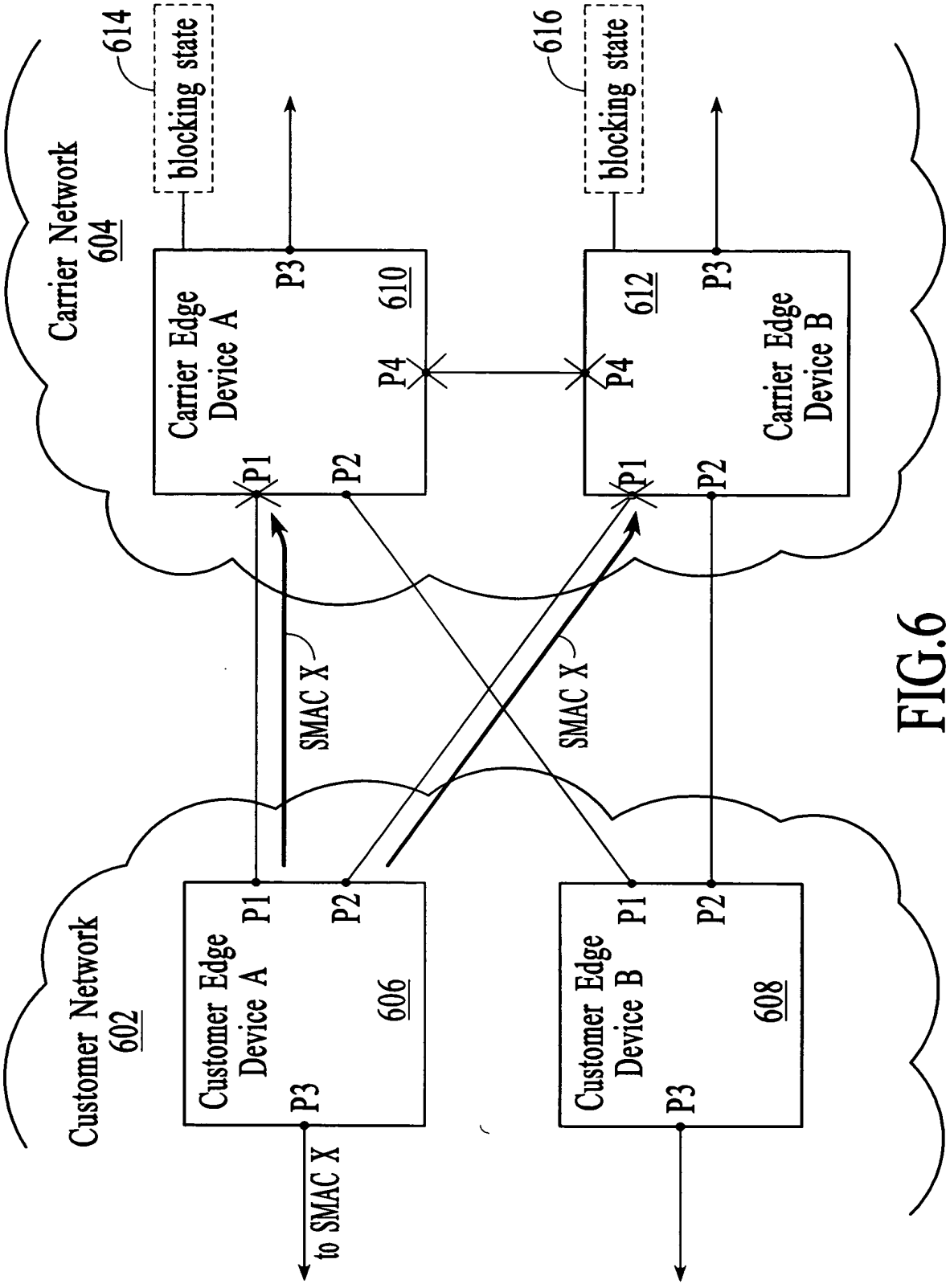
Carrier Network
604
614
blocking state
616
blocking state
Carrier Edge
Device A
610
P3
P4
P1
P2
612
Carrier Edge
Device B
SMAC X
SMAC X
Customer Network
602
Customer Edge
Device A
606
Customer Edge
Device B
608
to SMAC X

FIG.6

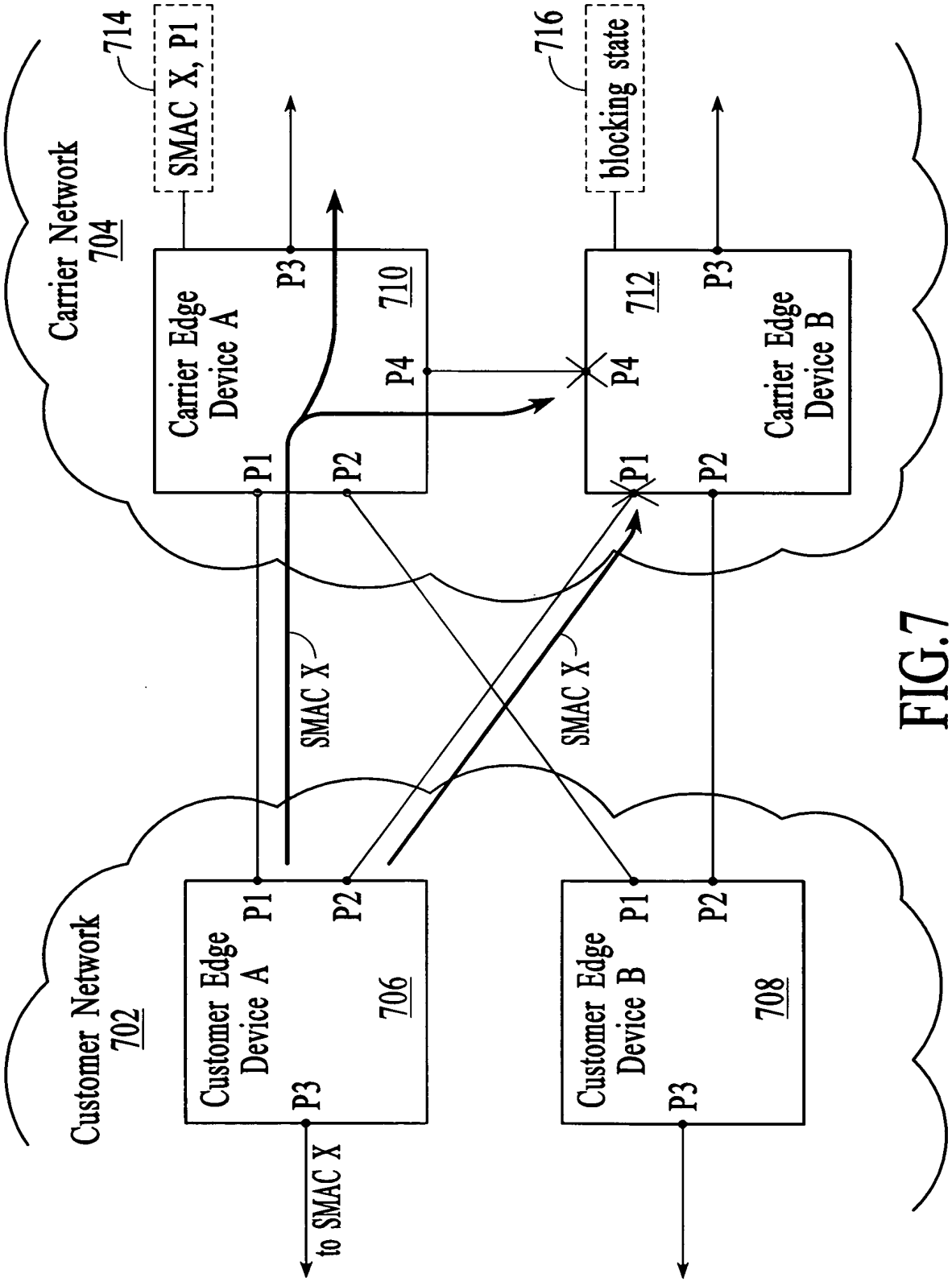
Carrier Network
704
714
SMAC X, P1
716
blocking state
Carrier Edge
Device A
710
P1
P2
P3
P4
Carrier Edge
Device B
712
SMAC X
SMAC X
Customer Network
702
Customer Edge
Device A
706
Customer Edge
Device B
708
to SMAC X

FIG.7

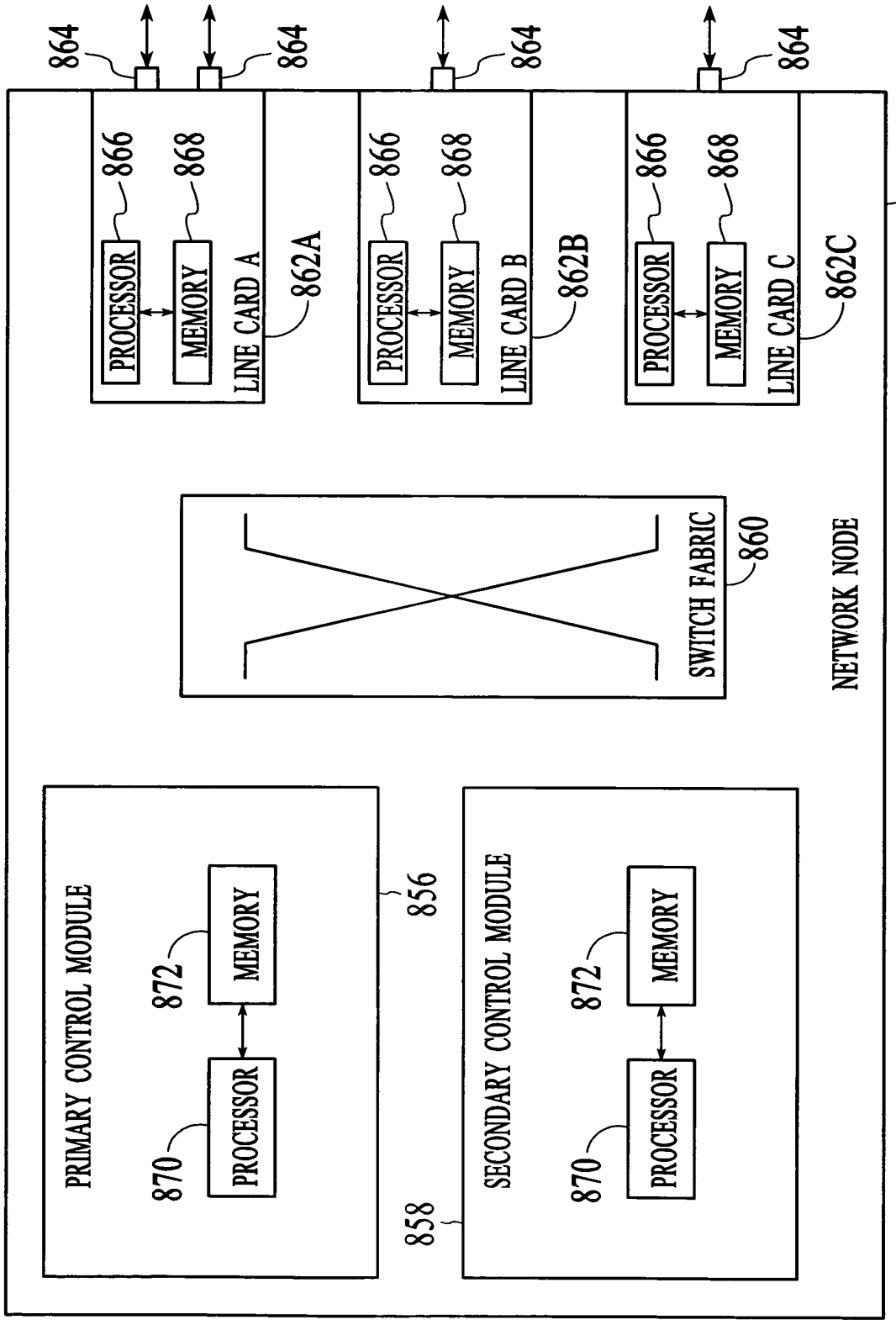
800
NETWORK NODE
PRIMARY CONTROL MODULE
856
SECONDARY CONTROL MODULE
858
PROCESSOR
MEMORY
870
872
SWITCH FABRIC
860
LINE CARD A
862A
LINE CARD B
862B
LINE CARD C
862C
866
868
864

FIG.8

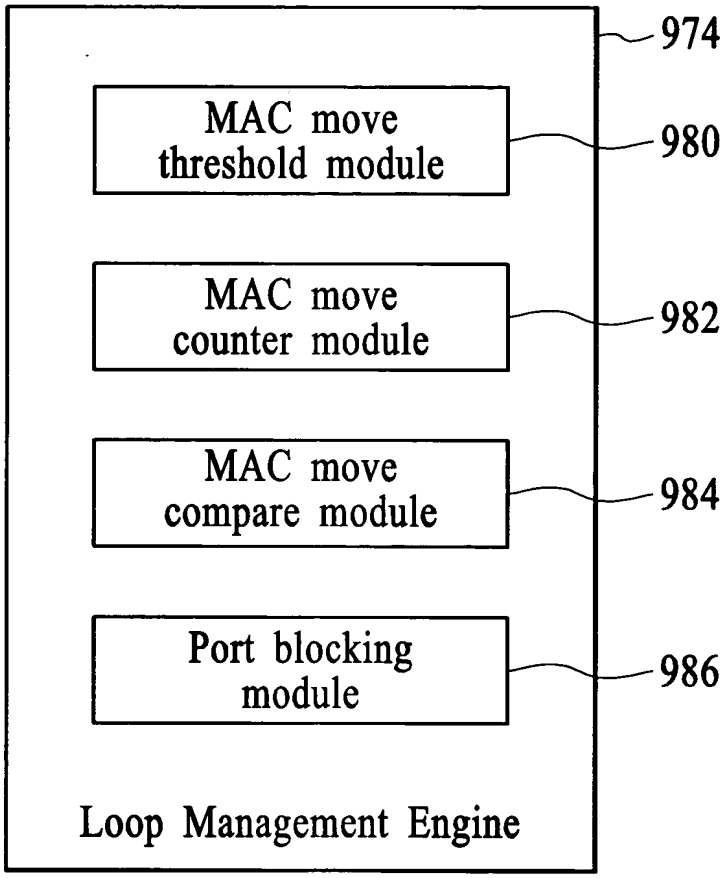
974
MAC move threshold module
980
MAC move counter module
982
MAC move compare module
984
Port blocking module
986
Loop Management Engine

FIG.9